NEDERLANDS ELEKTROTECHNISCH COMITE
Kalfjeslaan 2, 2623 AA Delft, Holland

NL-CECC 50 004 - 124
Issue 1 April 1982

Specification also available from:
N.V. PHILIPS GLOEILAMPENFABRIEKEN
ELCOMA DIVISION
BUILDING BAE
EINDHOVEN, HOLLAND

ELECTRONIC COMPONENTS OF ASSESSED QUALITY.
DETAIL SPECIFICATION IN ACCORDANCE WITH
NEN-CECC 50 000 : Issue 3 1980

DETAIL SPECIFICATION FOR:

BUS11
BUS11A

ORDERING INFORMATION : see clause 7

1. MECHANICAL DESCRIPTION

Outline:
IEC 191-2
B18, C14B
JEDEC: TO3

Dimensions in mm

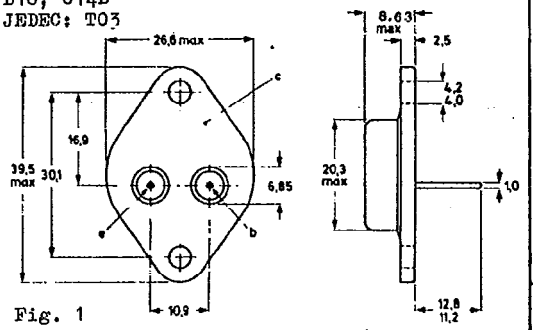


Fig. 1

MARKING INFORMATION : see clause 6

2. SHORT DESCRIPTION

NPN, case rated double diffused, glass-passivated silicon transistor for switching application in metal envelope.

3. LEVEL(S) OF QUALITY ASSESSMENT: F

4. LIMITING VALUES (absolute maximum rating system)

These apply over the operating temperature range unless otherwise stated.

4.1.	Operating case temperature	T_{case}		-65 to +150	°C
4.2.	Storage temperature	T_{stg}		-65 to +200	°C
4.3.	Collector-base voltage				
	Maximum continuous (direct) collector-base voltage with zero emitter current	$V_{CBO}{}^{max}$	BUS11	400	V
			BUS11A	450	V
	Maximum peak collector-base voltage with zero emitter current ($t_p \leq 10$msec)	$V_{CBOM}{}^{max}$	BUS11	850	V
			BUS11A	1000	V
4.4.	Maximum continuous (direct) collector-emitter voltage with zero base current	$V_{CEO}{}^{max}$	BUS11	400	V
			BUS11A	450	V
4.5.	Maximum continuous (direct) emitter-base voltage	$V_{EBO}{}^{max}$		9	V
4.6.	Maximum continuous collector current	$I_{C}{}^{max}$		5	A
	Maximum peak collector current ($t_p \leq 2$msec)	$I_{CM}{}^{max}$		10	A
4.7.	Maximum continuous base current	$I_{B}{}^{max}$		2	A
	Maximum peak base current ($t_p \leq 2$msec)	$I_{BM}{}^{max}$		3	A
4.9.2.	Maximum virtual (equivalent) junction temperature	$T_{(vj)}{}^{max}$		200	°C
	Absolute limit of power dissipation	$P_{tot}{}^{max}$		100	W
4.10	Area of safe operation see fig. 4, page 9.				

See the relevant Qualified Products List for availibility of components made to this specification

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ELECTRICAL CHARACTERISTICS
At T_{amb}=25°C unless otherwise stated

For inspection requirements see clause 8 (Groups A and C)

CECC 50 004 cl.	Characteristics and conditions	Verification in:	Type	Symbol	Value min	Value max	Unit
5.1.	Forward current transfer ratio V_{CE}=5V, I_C=0.5A	A3		h_{21E}	12		
5.2.	Collector-emitter saturation voltage	A2b					
	I_C=3A*, I_B=0.6A		BUS11	V_{CE}sat		1,5	V
	I_C=2.5A*, I_B=0.5A		BUS11A			1,5	V
5.4.	Base-emitter saturation voltage	A3					
	I_C=3A*, I_B=0.6A		BUS11	V_{BE}sat		1,4	V
	I_C=2.5A*, I_B=0.5A		BUS11A			1,4	V
5.5.	Collector-base cut-off current	A2b					
	V_{CB}= 850V		BUS11	$I_{CBO(1)}$		1	mA
	V_{CB}=1000V		BUS11A			1	mA
5.6.	Collector-base cut-off current	C2b					
	V_{CB}= 850V T_{case}=125°C		BUS11	$I_{CBO(2)}$		2	mA
	V_{CB}=1000V T_{case}=125°C		BUS11A			2	mA
5.7.1.	Switching times See fig.2 and 3, page 8.	A4					
	I_C=3A; I_{B1}=-I_{B2}=0.6A		BUS11	t_{on}		1	µs
				t_s		4	µs
				t_f		0,8	µs
	I_C=2,5A; I_{B1}=-I_{B2}=0.5A		BUS11A	t_{on}		1	µs
				t_s		4	µs
				t_f		0,8	µs
5.9.	Thermal resistance (junction to case)			$R_{th(j-case)}$		1,75	K/W

* $t_p \leq 300\mu sec$, dutyfactor $\leq 2\%$

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6. MARKING AND TERMINAL IDENTIFICATION

(1) Terminal identification : For connection of terminals see fig. 1 page 1.

(2) Marking:

Each transistor shall bear the following marking:

Manufacturer's Type number

Date code

Manufacturer's trade mark and factory identification code.

Each package containing one or more of these transistors shall bear:

a. The manufacturer's typenumber

b. The factory identification code.

c. The date code.

d. The number of this detail specification, i.e. NL-CECC 50 004 - 124

e. The quantity.

and shall be closed with the CECC-seal.

7. ORDERING INFORMATION

Orders of these transistors shall contain the following minimum information:

(Quantity) NPN, switching transistor type (see below) to NL-CECC 50 004 - 124 Issue 1, dated April 1982

Manufacturer's type nrs.: BUS11, BUS11A

8. TEST CONDITIONS AND INSPECTION REQUIREMENTS

These are given in the following tables.

In this section, all references to clause numbers are made with respect to CECC 50 000 unless otherwise stated.

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